

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendment and following discussion, is respectfully requested.

Claims 1-45 are pending. Claims 37 and 39 are amended to address informalities. No claims are newly added. No new matter is added.

In the outstanding Office Action, Claims 37 and 39 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1, 2 4-6, 23-27, 36-40, and 44-45 were rejected under 35 U.S.C. § 102(b) as anticipated by Metcalfe (WO 98/42947). Claims 3, 8, 9, 41, and 43 were rejected under 35 U.S.C. § 103(a) as obvious over Metcalfe. Claims 7, 13, 14, 28-35, and 42 were rejected under 35 U.S.C. § 103(a) as obvious over Metcalfe in view of Banker et al. (U.S. Patent No. 6,332,110). Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as obvious over Metcalfe in view of Klementich (U.S. Patent No. 5,462,315). Claim 12 was rejected under 35 U.S.C. § 103(a) as obvious over Metcalfe in view of Yamamoto et al. (U.S. Patent No. 5,419,595, herein “Yamamoto”). Claims 1-9, 13, 14, 16, 17, 23-27, and 36-45 were rejected under 35 U.S.C. § 103(a) as obvious over Verger et al. (WO 03/06037, herein “Verger”) in view of Metcalfe. Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as obvious over Verger in view of Metcalfe and Klementich. Claim 12 was rejected under 35 U.S.C. § 103(a) as obvious over Verger, Metcalfe and Yamamoto.

At the outset, Applicants note with appreciation the courtesy of a personal interview granted by Primary Examiner James Hewitt to Applicants’ representative. In combination with the Interview Summary provided by Primary Examiner Hewitt, the substance of the personal interview is substantially summarized below in accordance with MPEP § 713.04.

Regarding the rejection of Claims 37 and 39 as indefinite, Claims 37 and 39 are amended to delete the language indicated in the outstanding Office Action as unclear. Applicants respectfully submit that each of Claims 37 and 39 are clear and definite.

Accordingly, Applicants respectfully submit that the rejection of Claims 37 and 39 as indefinite is overcome.

Regarding the rejection of Claims 1 and 36 as either anticipated by Metcalfe or as obvious over Verger in view of Metcalfe, those rejections are respectfully traversed by the present response.

As discussed during the personal interview, independent Claims 1 and 36 each recite, in part “radial and sealing interference contact.”

In contrast, as discussed during the personal interview, Metcalfe is concerned with a slotted tube that expands to form diamond-shaped openings. In other words, Metcalfe intends for flow to occur in a radial direction from an outside of its slotted tube to an inside of its slotted tube. Thus, Metcalfe is unconcerned with sealing, as discussed during the personal interview. Therefore, as further discussed during the personal interview, a person of ordinary skill in the art would not rely on Metcalfe for features related to sealing, much less the particular radial interference sealing recited in each of independent Claims 1 and 36.

With reference to the attached Annex (1), in a hydrocarbon well or similar well there is a “casing” string and a “production tubing” string. The function of the casing is to consolidate the borehole of the well. In other words, it prevents collapse. “Solid expandable tubular” (A) of the casing, generally disposed between the wellhead and the production zone (the reservoir containing hydrocarbon), have to be tight to prevent the fluid loss. In contrary, a “slotted expandable liner” (B) (or “perforated liner”), of the casing string extends further to the solid expandable tubulars (A) and passes through hydrocarbon-containing formation. To prevent collapse while permitting hydrocarbon fluid flow, this “slotted expandable liner” (B) is equipped with permeable walls (for example with slots or openings) to allow fluid flow into the borehole. The slotted expandable liner (B) could also be called “sand filter” or “sand

“screen”. The setup of solid expandable tubular (A) and slotted expandable liner (B) is made during a step of “completion”, before the production phase.

The production tubing string, with a smaller diameter than the casing string, is inserted into the casing string. One of the functions of the tubing string is to collect the fluid. To collect the fluid, solid tubes (C) of the production tubing string have to resist to considerable pressure variations between the interior and the exterior (page 1, paragraph 3 of the present application). They are equipped with tight walls and tight connections both withstanding pressure. To reduce pressure variations, the annular space of the casing could be filled by mud for example. The solid tubes (C) unstop generally in the top of the production zone. The annulus between the solid tubes (C) of the production tubing and the bore of the casing, shortly above the production zone, is provided with a “production packer” (D). The production packer (D) isolates and stops fluid flow from bottom to annular space of the casing.

In Metcalfe (paragraphs 2 and 3) there is a reference to WO 93/25800 and WO 97/21901.

WO 93/25800 describes a method of completing an uncased section of a borehole. Paragraphs 2 and 3 of WO 93/25800 describes “to prevent collapse of the wall of the borehole, the borehole is cased by means of a casing arranged in the borehole (...) the uncased borehole section is completed with a liner which is provided with slots to allow fluid influx into the borehole”. In other words, WO 93/25800 concerns a permeable part that is expandable by a mandrel to a diameter larger than the casing diameter thus forming a lower part of casing.

WO 97/21901 refers to WO 93/25800 (paragraph 2) and describes “it is desirable to provide a relatively long section of borehole with slotted liner. This requires two or more

lengths of slotted liner to be joined together (...)" (paragraph 3). It describes connecting permeable casing parts.

Applicants note that a comparison between **WO 93/25800** (related to slotted parts of a casing) and **WO 93/25799** (related to solid expandable tubular parts of a casing) demonstrates the difference between these two technologies. For example, WO 93/25799 describes a metal to metal seal. In contrast, WO 93/25800 does not describe such sealing.

As discussed during the personal interview, Metcalfe itself describes an "expandable slotted tubing string and method for connecting such a tubing string" (Title). In paragraph 4 there is "According to the present invention there is provided a method for connecting lengths of expandable tubing defining overlapping longitudinal." As discussed during the personal interview, the presence of slots, see figures of Metcalfe (12), (18), (64), (65) and (66), confirms the particular feature to not be tight and to let fluid passing through the walls of connector (16). Metcalfe concerns the slotted expandable liner (B) of the casing string.

As discussed during the personal interview, there is no sealing between inside and outside the connector (16) of Metcalfe. In a slotted expandable liner of a casing, sealing between the inside and outside is not only unneeded, but it is contrary to the intended purpose. Internal and external pressures are equal in such a slotted casing. For these reasons, there would have been no apparent reason to establish a fluid tight joint between two slotted pipes (24 and 25 on Figure 2). Although, on the Figure 2 we can see there are slots everywhere and in particular in the region of the threads (26 and 27 and in the region of grooves (30 and 31) and tongues (32 and 33). As discussed during the personal interview, the presence of these features is contrary to the statements in the Response to Arguments about the importance of sealing for such joints (end of page 22, beginning of page 23 of the outstanding Office Action).

Concerning the part of Claims 1 and 36 “generating a first radial and sealing interference contact of one of said first inner and outer surfaces of the first lip against said second outer surface or said third inner surface respectively”, the outstanding Office Action states this feature is taught by Metcalfe in Figure 2. Applicants traverse this assertion.

The outstanding Office Action states “As shown in Fig. 2, (...) the abutting surfaces form metal-to-metal contact seals”. However, as discussed during the interview, Fig. 2 merely shows surfaces. There is no teaching of which surfaces are actually abutting or of abutment made by threading. The scale of Figure 2 does not allow deriving any teaching from Fig. 2.

The outstanding Office Action states “They [abutting surfaces] are shown to be in abutment, and further, in interfering and sealing contact”. However, mere figure cannot show neither interfering and, especially, sealing. Further, Claims 1 and 36 do not recite sealing contact of the **abutment** surfaces.

The outstanding Office Action states “Therefore, manufacturing tolerances for such joints are very strict” and “It is unclear as to how these surfaces [angled surfaces on Fig. 2] cannot be construed as abutting surfaces”. The man skilled in the art knows that manufacturing tolerances do not permit to ensure two distinct areas of axial abutments.

Seeing Figure 2, a man skilled in the art sees straight and inclined surfaces and threadings. The inclined surfaces (approximately 45° relative to a plane perpendicular to the longitudinal direction on Figure 2) could not be interpreted without the least explanation in the text.

The outstanding Office Action states “[a]nd as Metcalf is surely concerned with establishing a fluid tight joint (such that there is no leakage)”. However, as discussed during the personal interview and in the text above, this feature does not exist for this type of **slotted** parts.

The outstanding Office Action states “Metcalf's invention is drawn to a tubing joint in a wellbore which passes oil”. But Metcalf's invention is drawn to a **slotted** expandable liner in a wellbore which **oil passes diametrically from the external to the internal**. The outstanding Office Action states “In such joints, for many reasons, it is vital to not have any leakage. (...) and sealing is very important”. However, as discussed during the personal interview, in the slotted expandable liner domain of Metcalf, the sealing is not important.

Regarding the rejection of Claims 1 and 36 as obvious over Verger in view of Metcalf, that rejection is respectfully traversed by the present response.

Verger does not disclose the “second and third abutment surfaces selected so as to allow said second abutment surface to rest against said third abutment surface” of Claim 1 nor any radial and sealing interference contact due to such abutment surfaces. These features allow to the device to be able to withstand considerable pressure variation between the interior and the exterior. Verger does not contain any incitation or suggestion to combine it with Metcalf's **slotted** elements to solve the problem of sealing.

Metcalf does remedy the deficiencies of Verger. One of the benefits provided by the device and method recited in the independent claims (ensure sealing) is totally absent from Metcalf. In Metcalf, the pressure difference between the interior and the exterior of the elements is zero thanks to the presence of slots. Even if a person skilled in the art look for a solution to realize a sealing contact, he would look for device “able to withstand (...) considerable pressure variations between the interior and the exterior” (paragraph 3 of the present application). It is important to understand that the more the pressure variation is important, the more the sealing is difficult to realize. A person skilled in the art would have had no apparent reason to use Metcalf to modify Verger to reproduce the recited device and method.

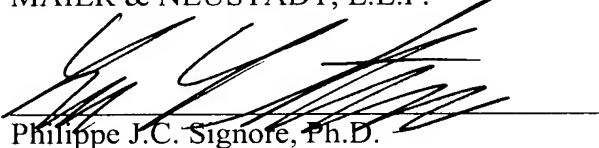
In conclusion, a person skilled in the art reading Verger would have had no apparent reason to combine it with Metcalfe. A combination of Verger and Metcalfe would not be considered by a person skilled in the art. No reasonable combination of Verger and Metcalfe would include all the features recited in either of Claims 1 or 36 or any of the claims depending therefrom.

None of the remaining references remedies the deficiencies discussed above regarding Metcalfe and Verger. Indeed, no reasonable combination of Verger, Metcalfe, and any of the remaining references would include all of the features recited in either of independent Claims 1 or 36 or any of the claims depending therefrom.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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Annex 1

